

U.S. Patent Application No. 10/649,348
Request for Reconsideration dated June 2, 2005
Reply to Office Action dated January 18, 2005

REMARKS/ARGUMENTS

Reconsideration and continued examination of the above-identified application are respectfully requested.

At pages 2-5 of the Office Action, the Examiner rejects claims 1-11 under 35 U.S.C. § 103(a) as being unpatentable over "Adhesion and Components of Solid Surface Energies" by John H. Clint, published in *Current Opinion in Colloid & Interface Science* 6, pp. 28-33 (2001) and "A Novel Method for Surface Free-Energy Determination of Powdered Solids" by Emil Chibowski et al., published in *Journal of Colloid and Interface Science* 240, 473-479 (2001). The Examiner asserts that Clint relates to a method for determining a rheological master curve of a filler in a matrix composition and refers to Fig. 1. The Examiner does indicate that Clint does not expressly disclose the determination of work of cohesion of the filler and the subsequent difference between cohesion and adhesion and correlating the result. The Examiner then relies on Chibowski et al. to assert that the determination of surface energies, contact angles, work of adhesion, work of cohesion for a filler, and the difference between the two forming functional relationships are shown in Chibowski et al. Thus, the Examiner concludes that it would be obvious to one having ordinary skill in the art to employ the method steps of Chibowski et al. in Clint. For the following reasons, this rejection is respectfully traversed.

Claim 1 of the present application recites a method for determining a rheological master curve for a composition comprising a filler in a matrix. With respect to some of the steps set forth in claim 1, it is important to recognize that the determination of the work of adhesion is with respect to the work of adhesion of the matrix to the filler. Furthermore, the work of cohesion is with

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respect to the work of cohesion of the filler.

With respect to the Examiner's comments concerning the arguments previously filed on October 29, 2004, the applicants respond as follows.

The Examiner asserts that Chibowski et al., at page 475, paragraph 2, clearly states that the derivations of the equation [13] and others "can be applied also to a porous bed of solid powder." The Examiner relies on this statement to assert that one having ordinary skill in the art would consider that the work of cohesion in equation [13] can refer to solid powders since solid powders can take on fluid-like behaviors due to their inherent nature of behaving "flow-like" as individual particles having the inherent inability to resist shear stress. However, the Examiner's reliance on Chibowski et al. in general and, in particular, page 475, paragraph 2, is not correct as will be explained.

In particular, Chibowski et al.'s statement that the derivations can be applied to a porous bed of solid powder does not mean that the equation involves the work of cohesion of a solid, such as a filler. When Chibowski et al. is read as a whole, it is clear that the porous bed of powder discussed by Chibowski et al. is with respect to still determining the W_c of the liquid and not the solid or porous bed of solid powder. In reviewing Chibowski et al., it is clear that the discussion regarding powdered solids is with respect to a test method where the powder is a substitute for the use of glass capillaries. To assist the Examiner, the Examiner's attention is directed to page 476 of Chibowski et al., under the experimental section. As can be seen, glass capillaries are used as one method to determine the capillary rise. As an alternative, powdered solids, as discussed at page 476, are placed in plastic tips of a pipette. The tip outlet is blocked with a tiny swab to avoid leakage of

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the powder during the experiment and the solid sample is packed into a bed. Then, the probe liquids are applied. As shown at the second column of page 476 of Chibowski et al., with this use of powders as a bed, the probe liquid wets the bed and ultimately the bed is weighed. As can be seen from these experiments, there is no flowing of powder in this experiment. Furthermore, from this experiment, it is clear that the porous bed of powder is still only used in determining the work of adhesion between the liquid and solid and there is no determination of the work of cohesion of the powder.

At the remaining sections of the experimental part, namely pages 477-478, it is clear that the same type of tests were run for other liquids in a powder bed. Again, there is no movement of the powder and no determination of the work of cohesion of the powder. Further, as indicated before, the particular equation [13] of Chibowski et al. strictly relates to the work of cohesion of the liquid. As clearly stated by Chibowski et al., " W_a is the work of the liquid adhesion, W_c is its work of cohesion." (emphasis added) Clearly, the work of cohesion is with reference to the liquid. In addition, nowhere in Chibowski et al. is W_c defined and, certainly, to one skilled in the art, it would have meant W_c of the liquid based on a reading of Chibowski et al.

Clint does not overcome the deficiencies of Chibowski et al. since it strictly relates to the determination of work of adhesion for a liquid to solid and there is no teaching or suggestion of a work of cohesion for a solid as set forth in the claimed invention.

In addition, in the final Office Action, it appears the Examiner equates §112 with §103 with respect to arguments presented by the applicant. However, there are different standards applied with respect to a § 112 rejection and a §103 rejection. In a §112 rejection, second paragraph, for

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indefiniteness, compliance is based on a reading of the application and claims with the knowledge of one skilled in the art. Thus, when applicants state that one of ordinary skill in the art would clearly understand the claims as written, this is with the knowledge of the present application in hand since the determination is what one skilled in the art would understand as definite from a reading of the present application. To the contrary, a §103 determination is not based on the knowledge of the present application. A §103 determination is based on what one skilled in the art would have known prior to the present application. Thus, the applicants believe the Examiner has misinterpreted and/or misread the applicants arguments and has attempted to apply these comments to the Examiner's §103 rejection which is incorrect. Furthermore, contrary to the Examiner's comments, the applicants have disagreed with the Examiner's basic scientific method/principal statements made by the Examiner in the previous Office Action. In the Amendment filed on October 29, 2004, the applicants specifically addressed the comments made by the Examiner and have clearly stated that the Examiner has not provided any support in any of the cited references to show that it was within the skill of the art to perform several of the recited steps in the dependent claims. Applicants further argued that without any evidence in the actual cited art that these steps would be obvious to one skilled in the art, a *prima facie* case of obviousness has not been established for this reason as well. Thus, the applicants have clearly refuted the Examiner's complete basis for this rejection in view of the combined cited references.

The Examiner's reliance of what is known by those skilled in the art has not been shown in cited references and is based on the opinion of the Examiner, which is not a proper basis for rejecting the claims.

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In addition, all of the reasons provided in the Amendment dated October 29, 2004 are incorporated in their entirety by reference herein and still apply to the rejections presented by the Examiner in this final Office Action.


Due to the complexity of this technology, the applicant is more than willing to have an interview with the Examiner by telephone or in person to discuss the clear differences between the cited references and the claimed invention.

CONCLUSION

In view of the foregoing remarks, the applicants respectfully request reconsideration of this application and the timely allowance of the pending claims.

If there are any other fees due in connection with the filing of this response, please charge the fees to Deposit Account No. 03-0060. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such extension is requested and should also be charged to said Deposit Account.

Respectfully submitted,


Luke A. Kilyk
Reg. No. 33,251

Atty. Docket No. 03029 (3600-374-11)
KILYK & BOWERSOX, P.L.L.C.
53 A East Lee Street
Warrenton, VA 20186
Tel.: (540) 428-1701
Fax: (540) 428-1720